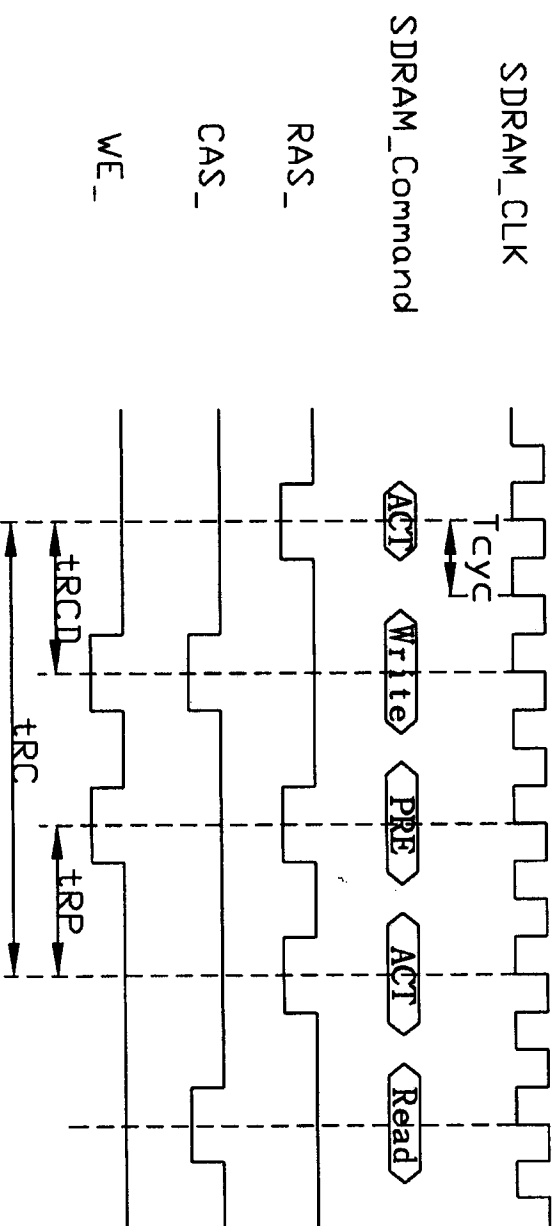


FIG.1(Prior Art)



ACT: Active Command
 Write: Write Command
 Read: Read Command
 PRE: Pre-Read Command

tRCD: RAS_ to CAS_delay time
 tRCDmin: minimum time for tRCD
 tRP: RAS pre-charge time
 tRPmin: minimum time for tRP
 tRC: Command Period
 tRCmin: minimum time for tRC

tRCD=2*tCyc
 tRCDmin=1.4*tCyc
 tRP=2*tCyc
 tRPmin=1.4*tCyc
 tRC=6*tCyc
 tRCmin=5*tCyc

FIG.2(Prior Art)

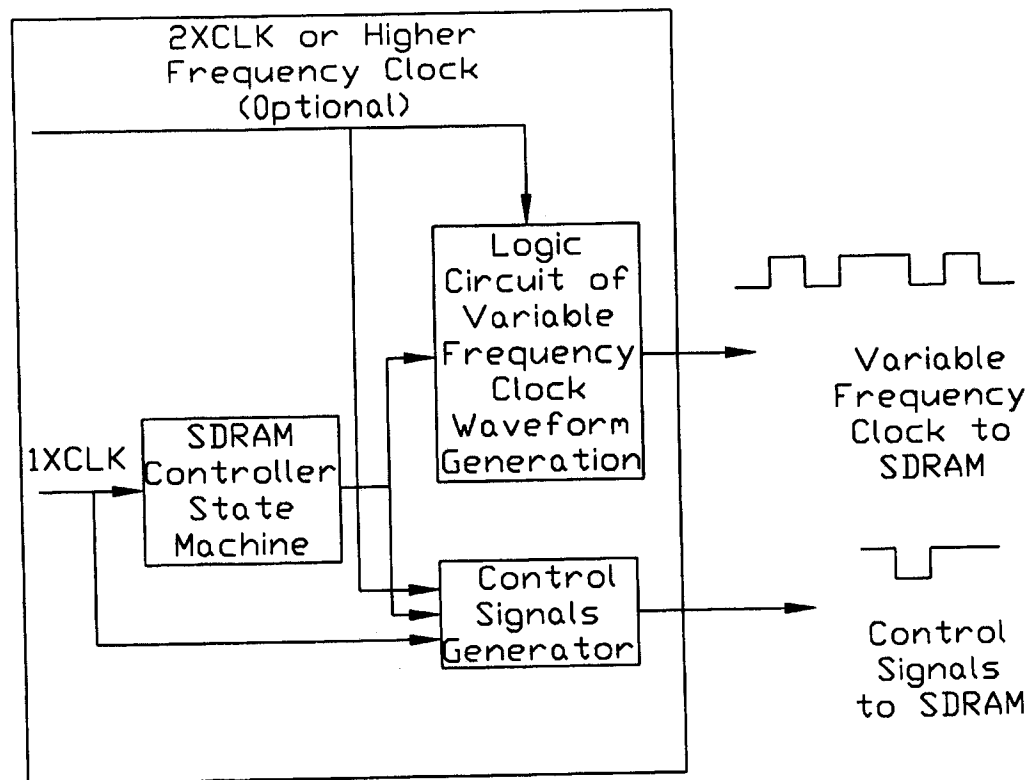
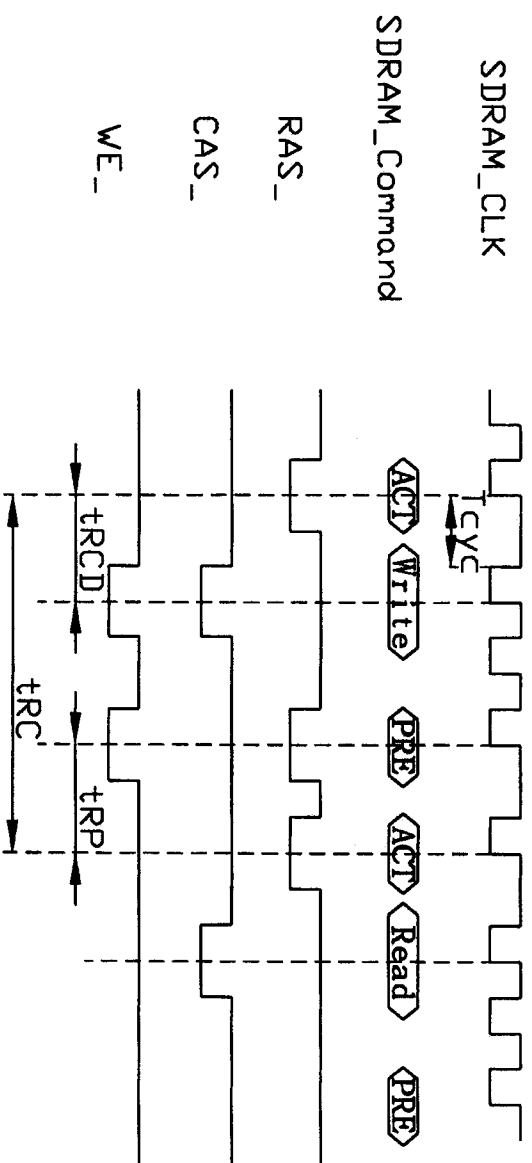


FIG. 3



ACT: Active Command
 Write: Write Command
 Read: Read Command
 PRE: Pre-Charge Command

tRCD: RAS_ to CAS_ delay time
 tRCDmin: minimum time for tRCD
 tRP: RAS pre-charge time
 tRPmin: minimum time for tRP
 tRC: Command Period
 tRCmin: minimum time for tRC

tRCD=2*tCYC
 tRCDmin=1.4*tCYC
 tRP=2*tCYC
 tRPmin=1.4*tCYC
 tRC=6*tCYC
 tRCmin=5*tCYC

FIG. 4